IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Manrique J. Brenes; Yen T. Nguyen		
Assignee:	Cisco Technology, Inc.		
Title:	METHOD AND SYSTEM FOR REAL-TIME BIT ERROR RATIO DETERMINATION		
Serial No.:	10/773,705	Filing Date:	February 6, 2004
Examiner:	Stephen M. Baker	Group Art Unit:	2112
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RESPONSE TO FINAL OFFICE ACTION

Dear Examiner Baker:

This paper is responsive to the Office Action dated April 15, 2008, having a shortened statutory period expiring on July 15, 2008. This Response is being filed within two months of the mailing date of the Office Action, since June 15, 2008 was a Sunday. Further examination and reconsideration are respectfully requested in view of the amendments and remarks set forth below.

No Amendments to the Specification are presented in this paper.

Amendments to the Claims are presented in the listing of claims beginning on page 2 of this paper.

No Amendments to the Drawings are presented in this paper.

Remarks begin on page 9 of this paper.

Amendments to the Claims

Please amend Claims 1, 12, 23 and 30, as follows:

1. (**Currently Amended**) A method comprising:
determining an operational link error rate of a link; ~~and~~
estimating a real-time physical link error rate of said link using said operational link error rate**;** and
applying a hysteresis factor, wherein
said hysteresis factor is a ratio of a physical link alarm set threshold to a physical link alarm clear threshold.

2. (Previously Presented) The method of claim 1,
wherein said link comprises a link between a first network element and a second network element of a communications network;
wherein said method further comprises,
detecting an operational link error on said link; and
wherein said determining said operational link error rate is responsive to said detecting.

3. (Original) The method of claim 2, further comprising:
transferring data on said link between said first network element and said second network element, wherein,
said detecting, said determining, and said estimating are performed at least partially concurrently with said transferring.

4. (Original) The method of claim 3, wherein said detecting comprises,
performing a cyclic redundancy check on at least a portion of said data.

5. (Original) The method of claim 4, wherein,
said transferring data on said link between said first network element and said second network element comprises,
transferring a data frame and a frame check sequence, and

said performing a cyclic redundancy check comprises,

performing an operation on said data frame to generate a result, and

comparing said result to said frame check sequence.

6. (Original) The method of claim 3, wherein said estimating comprises:

estimating a real-time bit error rate of said link.

7. (Original) The method of claim 3, wherein,

said transferring data on said link between said first network element and said second network element comprises,

transferring a plurality of data sets;

said detecting said operational link error on said link between said first network element and said second network element comprises,

detecting an operational link error within at least one of said plurality of data sets; and

said estimating said real-time physical link error rate of said link comprises,

indicating a physical link error for said at least one of said plurality of data sets.

8. (Original) The method of claim 3, further comprising:

identifying a physical link error alarm set threshold;

comparing said physical link error alarm set threshold and said real-time physical link error rate; and

generating an alarm signal in response to said comparing.

9. (Previously Presented) The method of claim 8, wherein said identifying comprises:

receiving data specifying a user-specified link error alarm set threshold and a user-specified hysteresis factor, wherein

said user-specified hysteresis factor is a ratio of a physical link alarm set threshold to a physical link alarm clear threshold;

determining a transmission bit rate of said link; and

generating a physical link error alarm set threshold using said user-specified link error alarm set threshold, said hysteresis factor, and said transmission bit rate of said link.

10. (Original) The method of claim 3, further comprising:

identifying a physical link error alarm clear threshold;

comparing said physical link error alarm clear threshold and said real-time physical link error rate; and

clearing an alarm signal in response to said comparing.

11. (Canceled)

12. (**Currently Amended**) A machine-readable medium having a plurality of instructions executable by a machine embodied therein, wherein said plurality of instructions when executed cause said machine to perform a method comprising:

determining an operational link error rate of a link; ~~and~~

estimating a real-time physical link error rate of said link using said operational link error rate**;** and

applying a hysteresis factor, wherein

said hysteresis factor is a ratio of a physical link alarm set threshold to a physical link alarm clear threshold.

13. (Previously Presented) The machine-readable medium of claim 12, wherein said link comprises a link between a first network element and a second network element of a communications network;

wherein said method further comprises,

detecting an operational link error on said link; and

wherein said determining said operational link error rate is responsive to said detecting.

14. (Original) The machine-readable medium of claim 13, said method further comprising:

transferring data on said link between said first network element and said second network element, wherein,

said detecting, said determining, and said estimating are performed at least partially concurrently with said transferring.

15. (Original) The machine-readable medium of claim 14, wherein said detecting comprises:

performing a cyclic redundancy check on at least a portion of said data.

16. (Original) The machine-readable medium of claim 15, wherein,

said transferring data on said link between said first network element and said second network element comprises,

transferring a data frame and a frame check sequence, and

said performing a cyclic redundancy check comprises,

performing an operation on said data frame to generate a result, and

comparing said result to said frame check sequence.

17. (Original) The machine-readable medium of claim 14, wherein said estimating comprises:

estimating a real-time bit error rate of said link.

18. (Original) The machine-readable medium of claim 14, wherein,

said transferring data on said link between said first network element and said second network element comprises,

transferring a plurality of data sets;

said detecting said operational link error on said link between said first network element and said second network element comprises,

detecting an operational link error within at least one of said plurality of data sets; and

said estimating said real-time physical link error rate of said link comprises,

indicating a physical link error for said at least one of said plurality of data sets.

19. (Original) The machine-readable medium of claim 14, said method further comprising:

identifying a physical link error alarm set threshold;

comparing said physical link error alarm set threshold and said real-time physical link error rate; and

generating an alarm signal in response to said comparing.

20. (Previously Presented) The machine-readable medium of claim 19, wherein said identifying comprises:

receiving data specifying a user-specified link error alarm set threshold and a user-specified hysteresis factor, wherein

said user-specified hysteresis factor is a ratio of a physical link alarm set threshold to a physical link alarm clear threshold;

determining a transmission bit rate of said link; and

generating a physical link error alarm set threshold using said user-specified link error alarm set threshold, said hysteresis factor, and said transmission bit rate of said link

21. (Original) The machine-readable medium of claim 14, said method further comprising:

identifying a physical link error alarm clear threshold;

comparing said physical link error alarm clear threshold and said real-time physical link error rate; and

clearing an alarm signal in response to said comparing.

22. (Canceled)

23. (**Currently Amended**) An apparatus comprising:

a monitoring subsystem to determine an operational link error rate of a link and to estimate a real-time physical link error rate of said link using said operational link error rate and **to apply** a hysteresis factor, wherein

said hysteresis factor is a ratio of a physical link alarm set threshold to a physical link alarm clear threshold; and

an alarm subsystem to generate an alarm signal in response to a comparison of said real-time physical link error rate and a physical link error alarm set threshold.

24. (Original) The apparatus of claim 23, further comprising:

a configuration subsystem to receive data specifying said physical link error alarm set threshold.

25. (Original) The apparatus of claim 23, wherein said monitoring subsystem comprises:

a monitoring subsystem to detect an operational link error on said link.

26. (Original) The apparatus of claim 25, wherein

said link comprises a link between a first network element and a second network element of a communications network; and

said monitoring subsystem comprises

a monitoring subsystem to determine said operational link error rate of said link and to estimate said real-time physical link error rate of said link using said operational link error rate at least partially concurrently with a transfer of data between said first network element and said second network element on said link.

27. (Original) The apparatus of claim 26, wherein said monitoring subsystem to detect said operational link error on said link comprises:

a monitoring subsystem to perform a cyclic redundancy check on at least a portion of said data.

28. (Original) The apparatus of claim 26, wherein said cyclic redundancy check comprises a frame check sequence check.

29. (Original) The apparatus of claim 23, wherein said alarm subsystem comprises:

an alarm subsystem to clear said alarm signal in response to a comparison of said real-time physical link error rate and a physical link error alarm clear threshold.

30. (**Currently Amended**) An apparatus comprising:

means for determining an operational link error rate of a link; ~~**and**~~

means for estimating a real-time physical link error rate of said link using said operational link error rate**;** and

means for applying a hysteresis factor, wherein

said hysteresis factor is a ratio of a physical link alarm set threshold to a physical link alarm clear threshold.

31. (Original) The apparatus of claim 30,

wherein said link comprises a link between a first network element and a second network element of a communications network; and

said apparatus further comprises,

means for detecting an operational link error on said link coupled with said means for determining said operational link error rate of said link.

32. (Previously Presented) A method for identifying a physical link error alarm set threshold comprising:

receiving data specifying a user-specified link error alarm set threshold and a user-specified hysteresis factor, wherein

said user-specified hysteresis factor is a ratio of a physical link alarm set threshold to a physical link alarm clear threshold;

determining a transmission bit rate of said link; and

generating a physical link error alarm set threshold using said user-specified link error alarm set threshold, said hysteresis factor, and said transmission bit rate of said link.

REMARKS

Claims 1-10, 12-21, and 23-32 are pending in the application.

Claims 1-10, 12-21, and 23-31 have been rejected.

Claim 32 has been allowed.

Claims 1, 12, 23 and 30 are amended.

Unless otherwise specified in the below discussion, Applicants have amended the above-referenced claims in order to provide clarity or to correct informalities in the claims. Applicants further submit that, unless discussed below, these amendments are not intended to narrow the scope of the claims. By these amendments, Applicants do not concede that the cited art is prior to any invention now or previously claimed or that there was any ambiguity associated with the claims as originally presented. Applicants further reserve the right to pursue the original versions of the claims in the future, for example, in a continuing application.

Allowable Claims

Applicants thank the Examiner for the indication that Claim 32 is allowable as written. Applicants also thank the Examiner for the indication that the remaining claims would be allowable if amended as presented in the Office Action and as discussed below.

Rejection of Claims under 35 U.S.C. § 112

Claims 1-10, 12-21, and 23-31 stand rejected under 35 U.S.C. § 112 second paragraph as purportedly being indefinite for failing to particularly point out and

distinctly claim the subject matter which Applicants regard as the invention. In particular, the Office Action suggests that the phrase "'estimating a ... link error rate ... using ... a hysteresis factor' is apparently incorrect, as a 'hysteresis' is apparently only involved in determining an alarm state, not an error rate." Office Action, p.2. Applicants respectfully traverse this rejection by amending the claims.

While not conceding in the interpretation of the claims as expressed by the Office Action, Applicants have considered the amended language suggested in the Office Action and have adopted this language in amended Claims 1, 12, 23 and 30. The Office Action indicates that Claims 1, 12, 23 and 30, and all claims depending therefrom, will be in allowable condition if amended as suggested. *See* Office Action, p.5.

For at least these reasons, and those expressed in previous responses to Office Actions, Applicants submit that independent Claims 1, 12, 23 and 30, as amended, and all claims depending therefrom are in condition for allowance. Applicants therefore respectfully request the Examiner's reconsideration and withdrawal of the rejections to these claims and an indication of the allowability of same.

Rejection of Claims under 35 U.S.C. § 102

Claims 1-3, 6-8, 10, 12-14, 17-19, 21, 23-26 and 29-31 stand rejected under 35 U.S.C. § 102(b) as purportedly being anticipated by U.S. Patent No. 5,459,731 issued to Brief et al. ("Brief"). Applicants respectfully submit that in light of the above-discussed amendments to independent Claims 1, 12, 23 and 30, and the indication by the Office Action that these claims would be allowable if rewritten as indicated by the Office Action, that the rejections under 35 U.S.C. § 102 are moot. Applicants therefore

respectfully request the Examiner's reconsideration and withdrawal of the rejections to these claims and an indication of the allowability of same.

CONCLUSION

In view of the amendments and remarks set forth herein, the application and the claims therein are believed to be in condition for allowance without any further examination and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is invited to telephone the undersigned at 512-439-5090.

If any extensions of time under 37 C.F.R. § 1.136(a) are required in order for this submission to be considered timely, Applicant hereby petitions for such extensions. Applicant also hereby authorizes that any fees due for such extensions or any other fee associated with this submission, as specified in 37 C.F.R. § 1.16 or § 1.17, be charged to deposit account 502306.

Respectfully submitted,

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